

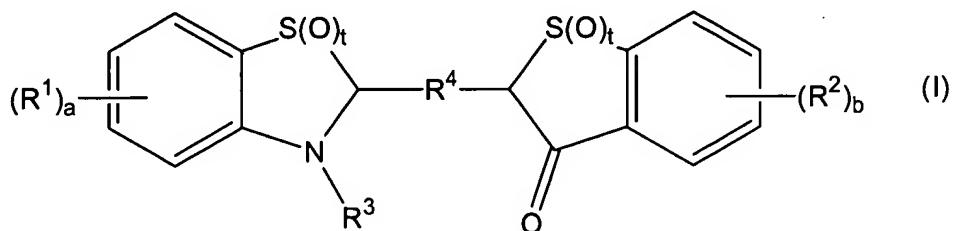
**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1.-15. (Canceled)

16. (Original) A pharmaceutical composition useful in treating cancer or inflammation in a human, wherein the pharmaceutical composition comprises a pharmaceutically acceptable carrier, diluent or excipient and a compound of formula (I):



wherein:

each t is independently 0, 1 or 2;

a is 1 to 4;

b is 1 to 4;

each R¹ and each R² is independently selected from the group consisting of hydrogen, alkyl, alkenyl, aryl, aralkyl, aralkenyl, halo, haloalkyl, haloalkenyl, nitro, cyano, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, heterocyclyl, heterocyclylalkyl, -OR⁵, -C(O)OR⁵, -C(O)N(R⁵)₂, -N(R⁵)₂, -N(R⁵)C(O)OR⁶, -N(R⁵)C(O)R⁵, -R⁷-N=N-O-R⁶, -S(O)ₚR⁵ (where p is 0 to 2), and -S(O)ₚN(R⁵)₂ (where p is 0 to 2);

R³ is hydrogen, alkyl, alkenyl, aryl, aralkyl, aralkenyl, haloalkyl, haloalkenyl, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, heterocyclyl, heterocyclylalkyl, -C(O)R⁵, -C(O)N(R⁵)₂, -S(O)ₚR⁵ (where p is 0 to 2), or -S(O)ₚN(R⁵)₂ (where p is 0 to 2);

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$R^4$  is a straight or branched alkylene or alkenylene chain containing 1 to 4 carbon atoms, wherein each carbon in the chain can be replaced by a heteroatom selected from nitrogen, oxygen and sulfur, and wherein each carbon or sulfur atom in the chain can be optionally oxidized, and wherein each carbon in the chain can be optionally substituted by one or two substituents independently selected from the group consisting of hydrogen, alkyl, alkenyl, aryl, aralkyl, aralkenyl, halo, haloalkyl, haloalkenyl, nitro, cyano, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, heterocyclyl, heterocyclylalkyl,  $-OR^5$ ,  $-C(O)OR^5$ ,  $-C(O)N(R^5)_2$ ,  $-N(R^5)_2$ ,  $-N(R^5)C(O)OR^6$ ,  $-N(R^5)C(O)R^5$ ,  $-R^7-N=N-O-R^6$ ,  $-S(O)_pR^5$  (where p is 0 to 2), and  $-S(O)_pN(R^5)_2$  (where p is 0 to 2), and each nitrogen in the chain can be optionally substituted by alkyl, alkenyl, aryl, aralkyl, aralkenyl, haloalkyl, haloalkenyl, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, heterocyclyl, heterocyclylalkyl,  $-C(O)R^5$ ,  $-C(O)N(R^5)_2$ ,  $-S(O)_pR^5$  (where p is 0 to 2), and  $-S(O)_pN(R^5)_2$  (where p is 0 to 2);

each  $R^5$  is independently selected from the group consisting of hydrogen, alkyl, alkenyl, haloalkyl, haloalkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl and cycloalkylalkenyl;

each  $R^6$  is independently selected from the group consisting of hydrogen, alkyl, alkenyl, haloalkyl, haloalkenyl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl and cycloalkylalkenyl;

$R^7$  is a bond or a straight or branched alkylene or alkenylene chain;

as a single stereoisomer, a mixture of stereoisomers, or as a racemic mixture of stereoisomers; or as a solvate or polymorph; or as a pharmaceutically acceptable salt thereof.

17. (Currently Amended) The use or pharmaceutical composition of ~~any one of Claims 1-16~~ Claim 16 wherein the compound of formula (I) is a compound of formula (I) wherein:

$R^4$  is selected from the group consisting of the following:

$=C(R^5)-C(R^5)=C(R^5)-C(R^5)=$ ,

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$=C(R^5)-$ ,  
 $=C(R^5)-C(R^5)=$ ,  
 $-C(R^5)=C(R^5)-$ ,  
 $-C(R^5)_2-C(R^5)=$ ,  
 $-[C(R^5)_2]_n-$  (where n is 1 to 4),  
 $=C(R^5)-C(R^5)_2-C(R^5)=$ ,  
 $-C(R^5)_2-C(R^5)_2-C(R^5)=$ ,  
 $-C(R^5)=C(R^5)-C(R^5)_2-$ ,  
 $=C(R^5)-N(R^5)-N=$ ,  
 $-[C(R^5)_2]_m-N(R^5)-N=$  (where m is 1 or 2), and  
 $-C(R^5)=N-N(R^5)-$ ; and

each  $R^5$  is independently selected from the group consisting of hydrogen, alkyl, alkenyl, haloalkyl, haloalkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl and cycloalkylalkenyl.

18. (Currently Amended) The ~~use or~~ pharmaceutical composition of any one of ~~Claims 1-16~~ Claim 16 wherein the compound of formula (I) is a compound of formula (I) wherein  $R^4$  is  $=C(R^5)-C(R^5)=C(R^5)-C(R^5)=$ .

19. (Currently Amended) The ~~use or~~ pharmaceutical composition of any one of ~~Claims 1-16~~ Claim 16 wherein the compound of formula (I) is a compound of formula (I) wherein  $R^4$  is  $=C(R^5)-$ .

20. (Currently Amended) The ~~use or~~ pharmaceutical composition of any one of ~~Claims 1-16~~ Claim 16 wherein the compound of formula (I) is a compound of formula (I) wherein  $R^4$  is  $=C(R^5)-C(R^5)=$ .

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21. (Currently Amended) The ~~use or~~ pharmaceutical composition of ~~any one of Claims 1-16~~ Claim 16 wherein the compound of formula (I) is a compound of formula (I) wherein  $R^4$  is  $-C(R^5)=C(R^5)-$ .

22. (Currently Amended) The ~~use or~~ pharmaceutical composition of ~~any one of Claims 1-16~~ Claim 16 wherein the compound of formula (I) is a compound of formula (I) wherein  $R^4$  is  $-C(R^5)_2-C(R^5)=$ .

23. (Currently Amended) The ~~use or~~ pharmaceutical composition of ~~any one of Claims 1-16~~ Claim 16 wherein the compound of formula (I) is a compound of formula (I) wherein  $R^4$  is  $-[C(R^5)_2]_n-$  (where  $n$  is 1 to 4).

24. (Currently Amended) The ~~use or~~ pharmaceutical composition of ~~any one of Claims 1-16~~ Claim 16 wherein the compound of formula (I) is a compound of formula (I) wherein  $R^4$  is  $=C(R^5)-C(R^5)_2-C(R^5)=$ .

25. (Currently Amended) The ~~use or~~ pharmaceutical composition of ~~any one of Claims 1-16~~ Claim 16 wherein the compound of formula (I) is a compound of formula (I) wherein  $R^4$  is  $-C(R^5)_2-C(R^5)_2-C(R^5)=$ .

26. (Currently Amended) The ~~use or~~ pharmaceutical composition of ~~any one of Claims 1-16~~ Claim 16 wherein the compound of formula (I) is a compound of formula (I) wherein  $R^4$  is  $-C(R^5)=C(R^5)-C(R^5)_2-$ .

27. (Currently Amended) The ~~use or~~ pharmaceutical composition of ~~any one of Claims 1-16~~ Claim 16 wherein the compound of formula (I) is a compound of formula (I) wherein  $R^4$  is  $=C(R^5)-N(R^5)-N=$ .

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28. (Currently Amended) The ~~use or~~ pharmaceutical composition of any one of ~~Claims 1-16~~ Claim 16 wherein the compound of formula (I) is a compound of formula (I) wherein R<sup>4</sup> is  $-\left[\text{C}(\text{R}^5)_2\right]_m-\text{N}(\text{R}^5)-\text{N}=$  (where m is 1 or 2).

29. (Currently Amended) The ~~use or~~ pharmaceutical composition of any one of ~~Claims 1-16~~ Claim 16 wherein the compound of formula (I) is a compound of formula (I) wherein R<sup>4</sup> is  $-\text{C}(\text{R}^5)=\text{N}-\text{N}(\text{R}^5)-$ .

30. (Currently Amended) The ~~use or~~ pharmaceutical composition of any one of ~~Claims 1-29~~ Claim 16 wherein the compound of formula (I) is a compound of formula (I) wherein at least one R<sup>1</sup> is hydrogen, alkyl, alkenyl, cycloalkyl, cycloalkylalkyl, or cycloalkylalkenyl.

31. (Currently Amended) The ~~use or~~ pharmaceutical composition of any one of ~~Claims 1-29~~ Claim 16 wherein the compound of formula (I) is a compound of formula (I) wherein at least one R<sup>1</sup> is aryl, aralkyl, or aralkenyl.

32. (Currently Amended) The ~~use or~~ pharmaceutical composition of any one of ~~Claims 1-29~~ Claim 16 wherein the compound of formula (I) is a compound of formula (I) wherein at least one R<sup>1</sup> is halo, haloalkyl, or haloalkenyl.

33. (Currently Amended) The ~~use or~~ pharmaceutical composition of any one of ~~Claims 1-29~~ Claim 16 wherein the compound of formula (I) is a compound of formula (I) wherein at least one R<sup>1</sup> is nitro, cyano,  $-\text{R}^7-\text{N}=\text{N}-\text{O}-\text{R}^6$  or  $-\text{N}(\text{R}^5)_2$ .

34. (Currently Amended) The ~~use or~~ pharmaceutical composition of any one of ~~Claims 1-29~~ Claim 16 wherein the compound of formula (I) is a compound of formula (I) wherein at least one R<sup>1</sup> is  $-\text{O}\text{R}^5$ ,  $-\text{S}(\text{O})_p\text{R}^5$  (where p is 0 to 2), or  $-\text{S}(\text{O})_p\text{N}(\text{R}^5)_2$  (where p is 0 to 2).

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35. (Currently Amended) The ~~use~~ or pharmaceutical composition of any one of Claims 1-29 Claim 16 wherein the compound of formula (I) is a compound of formula (I) wherein at least one R<sup>1</sup> is -C(O)OR<sup>5</sup> or -C(O)N(R<sup>5</sup>)<sub>2</sub>.

36. (Currently Amended) The ~~use~~ or pharmaceutical composition of any one of Claims 1-29 Claim 16 wherein the compound of formula (I) is a compound of formula (I) wherein at least one R<sup>1</sup> is -N(R<sup>5</sup>)C(O)OR<sup>6</sup> or -N(R<sup>5</sup>)C(O)R<sup>5</sup>.

37. (Currently Amended) The ~~use~~ or pharmaceutical composition of any one of Claims 1-29 Claim 16 wherein the compound of formula (I) is a compound of formula (I) wherein at least one R<sup>1</sup> is heterocyclyl or heterocyclylalkyl.

38. (Currently Amended) The ~~use~~ or pharmaceutical composition of any one of Claims 1-37 Claim 16 wherein the compound of formula (I) is a compound of formula (I) wherein at least one R<sup>2</sup> is hydrogen, alkyl, alkenyl, cycloalkyl, cycloalkylalkyl, or cycloalkylalkenyl.

39. (Currently Amended) The ~~use~~ or pharmaceutical composition of any one of Claims 1-37 Claim 16 wherein the compound of formula (I) is a compound of formula (I) wherein at least one R<sup>2</sup> is aryl, aralkyl, or aralkenyl.

40. (Currently Amended) The ~~use~~ or pharmaceutical composition of any one of Claims 1-37 Claim 16 wherein the compound of formula (I) is a compound of formula (I) wherein at least one R<sup>2</sup> is halo, haloalkyl, or haloalkenyl.

41. (Currently Amended) The ~~use~~ or pharmaceutical composition of any one of Claims 1-37 Claim 16 wherein the compound of formula (I) is a compound of formula (I) wherein at least one R<sup>2</sup> is nitro, cyano, -R<sup>7</sup>-N=N-O-R<sup>6</sup> or -N(R<sup>5</sup>)<sub>2</sub>.

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42. (Currently Amended) The use or pharmaceutical composition of any one of ~~Claims 1-37~~ Claim 16 wherein the compound of formula (I) is a compound of formula (I) wherein at least one R<sup>2</sup> is -OR<sup>5</sup>, -S(O)<sub>p</sub>R<sup>5</sup> (where p is 0 to 2), or -S(O)<sub>p</sub>N(R<sup>5</sup>)<sub>2</sub> (where p is 0 to 2).

43. (Currently Amended) The use or pharmaceutical composition of any one of ~~Claims 1-37~~ Claim 16 wherein the compound of formula (I) is a compound of formula (I) wherein at least one R<sup>2</sup> is -C(O)OR<sup>5</sup> or -C(O)N(R<sup>5</sup>)<sub>2</sub>.

44. (Currently Amended) The use or pharmaceutical composition of any one of ~~Claims 1-37~~ Claim 16 wherein the compound of formula (I) is a compound of formula (I) wherein at least one R<sup>2</sup> is -N(R<sup>5</sup>)C(O)OR<sup>6</sup> or -N(R<sup>5</sup>)C(O)R<sup>5</sup>.

45. (Currently Amended) The use or pharmaceutical composition of any one of ~~Claims 1-37~~ Claim 16 wherein the compound of formula (I) is a compound of formula (I) wherein at least one R<sup>2</sup> is heterocyclyl or heterocyclylalkyl.

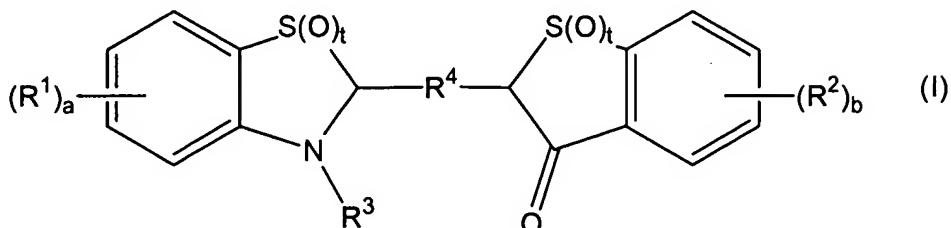
46. (Currently Amended) The use or pharmaceutical composition of any one of ~~Claims 1-45~~ Claim 16 wherein each t is 0.

47. (Currently Amended) The use or pharmaceutical composition of any one of ~~Claims 1-45~~ Claim 16 wherein each t is 1.

48. (Currently Amended) The use or pharmaceutical composition of any one of ~~Claims 1-45~~ Claim 16 wherein each t is 2.

49. (Currently Amended) A method of treating cancer, inflammation or a hyperproliferative disorder in a mammal, which method comprises administering to

the mammal in need thereof a therapeutically effective amount of a compound of formula (I):



wherein:

each t is independently 0, 1 or 2;

a is 1 to 4;

b is 1 to 4;

each R<sup>1</sup> and each R<sup>2</sup> is independently selected from the group consisting of hydrogen, alkyl, alkenyl, aryl, aralkyl, aralkenyl, halo, haloalkyl, haloalkenyl, nitro, cyano, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, heterocyclyl, heterocyclylalkyl, -OR<sup>5</sup>, -C(O)OR<sup>5</sup>, -C(O)N(R<sup>5</sup>)<sub>2</sub>, -N(R<sup>5</sup>)<sub>2</sub>, -N(R<sup>5</sup>)C(O)OR<sup>6</sup>, -N(R<sup>5</sup>)C(O)R<sup>5</sup>, -R<sup>7</sup>-N=N-O-R<sup>6</sup>, -S(O)<sub>p</sub>R<sup>5</sup> (where p is 0 to 2), and -S(O)<sub>p</sub>N(R<sup>5</sup>)<sub>2</sub> (where p is 0 to 2);

R<sup>3</sup> is hydrogen, alkyl, alkenyl, aryl, aralkyl, aralkenyl, haloalkyl, haloalkenyl, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, heterocyclyl, heterocyclylalkyl, -C(O)R<sup>5</sup>, -C(O)N(R<sup>5</sup>)<sub>2</sub>, -S(O)<sub>p</sub>R<sup>5</sup> (where p is 0 to 2), or -S(O)<sub>p</sub>N(R<sup>5</sup>)<sub>2</sub> (where p is 0 to 2);

R<sup>4</sup> is a straight or branched alkylene or alkenylene chain containing 1 to 4 carbon atoms, wherein each carbon in the chain can be replaced by a heteroatom selected from nitrogen, oxygen and sulfur, and wherein each carbon or sulfur atom in the chain can be optionally oxidized, and wherein each carbon in the chain can be optionally substituted by one or two substituents independently selected from the group consisting of hydrogen, alkyl, alkenyl, aryl, aralkyl, aralkenyl, halo, haloalkyl, haloalkenyl, nitro, cyano, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, heterocyclyl, heterocyclylalkyl, -OR<sup>5</sup>, -C(O)OR<sup>5</sup>, -C(O)N(R<sup>5</sup>)<sub>2</sub>, -N(R<sup>5</sup>)<sub>2</sub>, -N(R<sup>5</sup>)C(O)OR<sup>6</sup>, -N(R<sup>5</sup>)C(O)R<sup>5</sup>, -R<sup>7</sup>-N=N-O-R<sup>6</sup>, -S(O)<sub>p</sub>R<sup>5</sup> (where p is 0 to 2), and -S(O)<sub>p</sub>N(R<sup>5</sup>)<sub>2</sub> (where p is 0 to 2), and each nitrogen in

the chain can be optionally substituted by alkyl, alkenyl, aryl, aralkyl, aralkenyl, haloalkyl, haloalkenyl, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, heterocyclyl, heterocyclylalkyl,  $-C(O)R^5$ ,  $-C(O)N(R^5)_2$ ,  $-S(O)_pR^5$  (where p is 0 to 2), and  $-S(O)_pN(R^5)_2$  (where p is 0 to 2);

each  $R^5$  is independently selected from the group consisting of hydrogen, alkyl, alkenyl, haloalkyl, haloalkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl and cycloalkylalkenyl;

each  $R^6$  is independently selected from the group consisting of hydrogen, alkyl, alkenyl, haloalkyl, haloalkenyl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl and cycloalkylalkenyl;

$R^7$  is a bond or a straight or branched alkylene or alkenylene chain;

as a single stereoisomer, a mixture of stereoisomers, or as a racemic mixture of stereoisomers; or as a solvate or polymorph; or as a pharmaceutically acceptable salt thereof.

50. (Canceled)

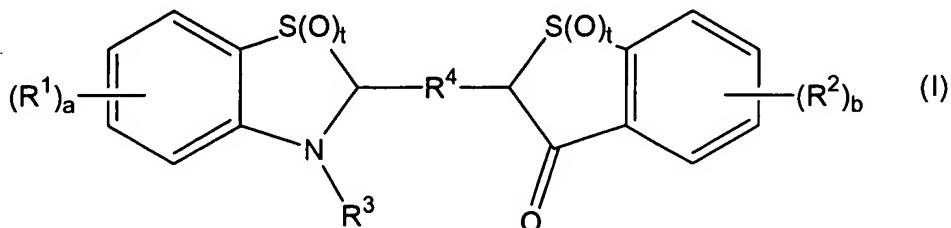
51. (Currently Amended) The method according to ~~any one of~~ Claim 49-~~or~~-50 wherein the ~~cancer or inflammation~~ cancer, inflammation or hyperproliferative disorder is associated with ~~hyperproliferation or tissue remodelling or repair~~.

52. (Currently Amended) The method according to ~~any one of~~ Claim 49-~~or~~-50 wherein the ~~cancer or inflammation~~ cancer, inflammation or hyperproliferative disorder is associated with the activity of an enzyme selected from the group consisting of PTPN12 and PTPN2.

53. (Canceled)

54. (Original) A method of treating a mammal having a disorder or condition associated with hyperproliferation and tissue remodelling or repair, wherein

said method comprises administering to the mammal having the disorder or condition a therapeutically effective amount of a compound of formula (I):



wherein:

each t is independently 0, 1 or 2;

a is 1 to 4;

b is 1 to 4;

each R<sup>1</sup> and each R<sup>2</sup> is independently selected from the group consisting of hydrogen, alkyl, alkenyl, aryl, aralkyl, aralkenyl, halo, haloalkyl, haloalkenyl, nitro, cyano, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, heterocyclyl, heterocyclylalkyl, -OR<sup>5</sup>, -C(O)OR<sup>5</sup>, -C(O)N(R<sup>5</sup>)<sub>2</sub>, -N(R<sup>5</sup>)<sub>2</sub>, -N(R<sup>5</sup>)C(O)OR<sup>6</sup>, -N(R<sup>5</sup>)C(O)R<sup>5</sup>, -R<sup>7</sup>-N=N-O-R<sup>6</sup>, -S(O)<sub>p</sub>R<sup>5</sup> (where p is 0 to 2), and -S(O)<sub>p</sub>N(R<sup>5</sup>)<sub>2</sub> (where p is 0 to 2);

R<sup>3</sup> is hydrogen, alkyl, alkenyl, aryl, aralkyl, aralkenyl, haloalkyl, haloalkenyl, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, heterocyclyl, heterocyclylalkyl, heterocyclylalkenyl, -C(O)R<sup>5</sup>, -C(O)N(R<sup>5</sup>)<sub>2</sub>, -S(O)<sub>p</sub>R<sup>5</sup> (where p is 0 to 2), or -S(O)<sub>p</sub>N(R<sup>5</sup>)<sub>2</sub> (where p is 0 to 2);

R<sup>4</sup> is a straight or branched alkylene or alkenylene chain containing 1 to 4 carbon atoms, wherein each carbon in the chain can be replaced by a heteroatom selected from nitrogen, oxygen and sulfur, and wherein each carbon or sulfur atom in the chain can be optionally oxidized, and wherein each carbon in the chain can be optionally substituted by one or two substituents independently selected from the group consisting of hydrogen, alkyl, alkenyl, aryl, aralkyl, aralkenyl, halo, haloalkyl, haloalkenyl, nitro, cyano, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, heterocyclyl, heterocyclylalkyl, -OR<sup>5</sup>, -C(O)OR<sup>5</sup>, -C(O)N(R<sup>5</sup>)<sub>2</sub>, -N(R<sup>5</sup>)<sub>2</sub>, -N(R<sup>5</sup>)C(O)OR<sup>6</sup>, -N(R<sup>5</sup>)C(O)R<sup>5</sup>, -R<sup>7</sup>-N=N-O-R<sup>6</sup>, -S(O)<sub>p</sub>R<sup>5</sup> (where p is 0 to 2), and -S(O)<sub>p</sub>N(R<sup>5</sup>)<sub>2</sub> (where p is 0 to 2), and each nitrogen in

the chain can be optionally substituted by alkyl, alkenyl, aryl, aralkyl, aralkenyl, haloalkyl, haloalkenyl, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, heterocyclyl, heterocyclylalkyl,  $-C(O)R^5$ ,  $-C(O)N(R^5)_2$ ,  $-S(O)_pR^5$  (where p is 0 to 2), and  $-S(O)_pN(R^5)_2$  (where p is 0 to 2);

each  $R^5$  is independently selected from the group consisting of hydrogen, alkyl, alkenyl, haloalkyl, haloalkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl and cycloalkylalkenyl;

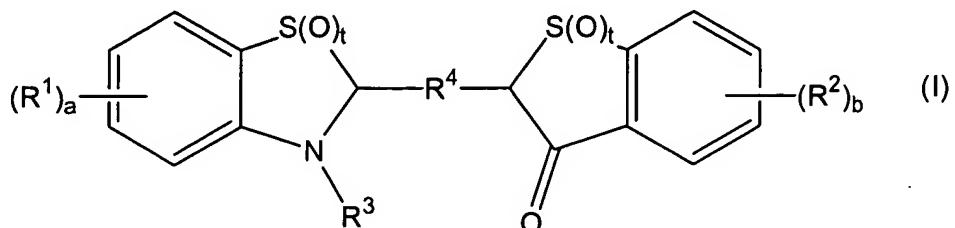
each  $R^6$  is independently selected from the group consisting of hydrogen, alkyl, alkenyl, haloalkyl, haloalkenyl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl and cycloalkylalkenyl;

$R^7$  is a bond or a straight or branched alkylene or alkenylene chain;

as a single stereoisomer, a mixture of stereoisomers, or as a racemic mixture of stereoisomers; or as a solvate or polymorph; or as a pharmaceutically acceptable salt thereof.

55. (Currently Amended) The method according to ~~any one of Claims 49-54~~ Claim 49 or Claim 54 wherein the mammal is a human.

56. (Original) A method of treating a mammalian cell with a compound of formula (I):



wherein:

each t is independently 0, 1 or 2;

a is 1 to 4;

b is 1 to 4;

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each  $R^1$  and each  $R^2$  is independently selected from the group consisting of hydrogen, alkyl, alkenyl, aryl, aralkyl, aralkenyl, halo, haloalkyl, haloalkenyl, nitro, cyano, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, heterocyclyl, heterocyclylalkyl,  $-OR^5$ ,  $-C(O)OR^5$ ,  $-C(O)N(R^5)_2$ ,  $-N(R^5)_2$ ,  $-N(R^5)C(O)OR^6$ ,  $-N(R^5)C(O)R^5$ ,  $-R^7-N=N-O-R^6$ ,  $-S(O)_pR^5$  (where  $p$  is 0 to 2), and  $-S(O)_pN(R^5)_2$  (where  $p$  is 0 to 2);

$R^3$  is hydrogen, alkyl, alkenyl, aryl, aralkyl, aralkenyl, haloalkyl, haloalkenyl, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, heterocyclyl, heterocyclylalkyl,  $-C(O)R^5$ ,  $-C(O)N(R^5)_2$ ,  $-S(O)_pR^5$  (where  $p$  is 0 to 2), or  $-S(O)_pN(R^5)_2$  (where  $p$  is 0 to 2);

$R^4$  is a straight or branched alkylene or alkenylene chain containing 1 to 4 carbon atoms, wherein each carbon in the chain can be replaced by a heteroatom selected from nitrogen, oxygen and sulfur, and wherein each carbon or sulfur atom in the chain can be optionally oxidized, and wherein each carbon in the chain can be optionally substituted by one or two substituents independently selected from the group consisting of hydrogen, alkyl, alkenyl, aryl, aralkyl, aralkenyl, halo, haloalkyl, haloalkenyl, nitro, cyano, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, heterocyclyl, heterocyclylalkyl,  $-OR^5$ ,  $-C(O)OR^5$ ,  $-C(O)N(R^5)_2$ ,  $-N(R^5)_2$ ,  $-N(R^5)C(O)OR^6$ ,  $-N(R^5)C(O)R^5$ ,  $-R^7-N=N-O-R^6$ ,  $-S(O)_pR^5$  (where  $p$  is 0 to 2), and  $-S(O)_pN(R^5)_2$  (where  $p$  is 0 to 2), and each nitrogen in the chain can be optionally substituted by alkyl, alkenyl, aryl, aralkyl, aralkenyl, haloalkyl, haloalkenyl, cycloalkyl, cycloalkylalkyl, cycloalkylalkenyl, heterocyclyl, heterocyclylalkyl,  $-C(O)R^5$ ,  $-C(O)N(R^5)_2$ ,  $-S(O)_pR^5$  (where  $p$  is 0 to 2), and  $-S(O)_pN(R^5)_2$  (where  $p$  is 0 to 2);

each  $R^5$  is independently selected from the group consisting of hydrogen, alkyl, alkenyl, haloalkyl, haloalkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl and cycloalkylalkenyl;

each  $R^6$  is independently selected from the group consisting of hydrogen, alkyl, alkenyl, haloalkyl, haloalkenyl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl and cycloalkylalkenyl;

$R^7$  is a bond or a straight or branched alkylene or alkenylene chain;

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as a single stereoisomer, a mixture of stereoisomers, or as a racemic mixture of stereoisomers; or as a solvate or polymorph; or as a pharmaceutically acceptable salt thereof,

wherein the method comprises administering the compound of formula (I) to a mammalian cell and the compound of formula (I) is capable of inhibiting the activity of PTPN12 and/or PTPN2 within the mammalian cell.

57. (Original) The method of Claim 56 wherein the mammalian cell is treated *in vitro*.

58. (Currently Amended) The method of ~~Claim 8~~ Claim 56 wherein the mammalian cell is treated *in vivo*.

59. (Currently Amended) The method of Claim 56 wherein the inhibition of activity results in a reduction of cell adhesion or a reduction of cell division.

60. (Canceled)

61. (Currently Amended) The method of ~~Claims 56~~ Claim 56, wherein the inhibition of activity results in a reduction of cell migration.

62. (Currently Amended) The method of ~~Claims 56~~ Claim 56, wherein the inhibition of activity results in control of tumor growth.

63. (Original) The method of Claim 56 wherein the inhibition of activity results in control of lymphocyte activation.

64. (Currently Amended) The method of ~~any one of Claims 49-63~~ Claim 49 wherein the compound of formula (I) is a compound of formula (I) wherein:

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$R^4$  is selected from the group consisting of the following:

$=C(R^5)-C(R^5)=C(R^5)-C(R^5)=$ ,  
 $=C(R^5)-$ ,  
 $=C(R^5)-C(R^5)=$ ,  
 $-C(R^5)=C(R^5)-$ ,  
 $-C(R^5)_2-C(R^5)=$ ,  
 $-[C(R^5)_2]_n-$  (where  $n$  is 1 to 4),  
 $=C(R^5)-C(R^5)_2-C(R^5)=$ ,  
 $-C(R^5)_2-C(R^5)_2-C(R^5)=$ ,  
 $-C(R^5)=C(R^5)-C(R^5)_2-$ ,  
 $=C(R^5)-N(R^5)-N=$ ,  
 $-[C(R^5)_2]_m-N(R^5)-N=$  (where  $m$  is 1 or 2), and  
 $-C(R^5)=N-N(R^5)-$ ; and

each  $R^5$  is independently selected from the group consisting of hydrogen, alkyl, alkenyl, haloalkyl, haloalkenyl, aryl, aralkyl, aralkenyl, cycloalkyl, cycloalkylalkyl and cycloalkylalkenyl.

65. (Currently Amended) The method of ~~any one of Claims 49-63~~ Claim 49 wherein the compound of formula (I) is a compound of formula (I) wherein  $R^4$  is  $=C(R^5)-C(R^5)=C(R^5)-C(R^5)=$ .

66. (Currently Amended) The method of ~~any one of Claims 49-63~~ Claim 49 wherein the compound of formula (I) is a compound of formula (I) wherein  $R^4$  is  $=C(R^5)-$ .

67. (Currently Amended) The method of ~~any one of Claims 49-63~~ Claim 49 wherein the compound of formula (I) is a compound of formula (I) wherein  $R^4$  is  $=C(R^5)-C(R^5)=$ .

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68. (Currently Amended) The method of ~~any one of Claims 49-63~~  
Claim 49 wherein the compound of formula (I) is a compound of formula (I) wherein  $R^4$  is  $-C(R^5)=C(R^5)-$ .

69. (Currently Amended) The method of ~~any one of Claims 49-63~~  
Claim 49 wherein the compound of formula (I) is a compound of formula (I) wherein  $R^4$  is  $-C(R^5)_2-C(R^5)=$ .

70. (Currently Amended) The method of ~~any one of Claims 49-63~~  
Claim 49 wherein the compound of formula (I) is a compound of formula (I) wherein  $R^4$  is  $-[C(R^5)_2]_n-$  (where  $n$  is 1 to 4).

71. (Currently Amended) The method of ~~any one of Claims 49-63~~  
Claim 49 wherein the compound of formula (I) is a compound of formula (I) wherein  $R^4$  is  $=C(R^5)-C(R^5)_2-C(R^5)=$ .

72. (Currently Amended) The method of ~~any one of Claims 49-63~~  
Claim 49 wherein the compound of formula (I) is a compound of formula (I) wherein  $R^4$  is  $-C(R^5)_2-C(R^5)_2-C(R^5)=$ .

73. (Currently Amended) The method of ~~any one of Claims 49-63~~  
Claim 49 wherein the compound of formula (I) is a compound of formula (I) wherein  $R^4$  is  $-C(R^5)=C(R^5)-C(R^5)_2-$ .

74. (Currently Amended) The method of ~~any one of Claims 49-63~~  
Claim 49 wherein the compound of formula (I) is a compound of formula (I) wherein  $R^4$  is  $=C(R^5)-N(R^5)-N=$ .

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75. (Currently Amended) The method of ~~any one of Claims 49-63~~  
Claim 49 wherein the compound of formula (I) is a compound of formula (I) wherein  $R^4$  is  $-[C(R^5)_2]_m-N(R^5)-N=$  (where  $m$  is 1 or 2).

76. (Currently Amended) The method of ~~any one of Claims 49-63~~  
Claim 49 wherein the compound of formula (I) is a compound of formula (I) wherein  $R^4$  is  $-C(R^5)=N-N(R^5)-$ .

77. (Currently Amended) The method of ~~any one of Claims 49-76~~  
Claim 49 wherein the compound of formula (I) is a compound of formula (I) wherein at least one  $R^1$  is hydrogen, alkyl, alkenyl, cycloalkyl, cycloalkylalkyl, or cycloalkylalkenyl.

78. (Currently Amended) The method of ~~any one of Claims 49-76~~  
Claim 49 wherein the compound of formula (I) is a compound of formula (I) wherein at least one  $R^1$  is aryl, aralkyl, or aralkenyl.

79. (Currently Amended) The method of ~~any one of Claims 49-76~~  
Claim 49 wherein the compound of formula (I) is a compound of formula (I) wherein at least one  $R^1$  is halo, haloalkyl, or haloalkenyl.

80. (Currently Amended) The method of ~~any one of Claims 49-76~~  
Claim 49 wherein the compound of formula (I) is a compound of formula (I) wherein at least one  $R^1$  is nitro, cyano,  $-R^7-N=N-O-R^6$  or  $-N(R^5)_2$ .

81. (Currently Amended) The method of ~~any one of Claims 49-76~~  
Claim 49 wherein the compound of formula (I) is a compound of formula (I) wherein at least one  $R^1$  is  $-OR^5$ ,  $-S(O)_pR^5$  (where  $p$  is 0 to 2), or  $-S(O)_pN(R^5)_2$  (where  $p$  is 0 to 2).

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82. (Currently Amended) The method of ~~any one of Claims 49-76~~  
Claim 49 wherein the compound of formula (I) is a compound of formula (I) wherein at least one R<sup>1</sup> is -C(O)OR<sup>5</sup> or -C(O)N(R<sup>5</sup>)<sub>2</sub>.

83. (Currently Amended) The method of ~~any one of Claims 49-76~~  
Claim 49 wherein the compound of formula (I) is a compound of formula (I) wherein at least one R<sup>1</sup> is -N(R<sup>5</sup>)C(O)OR<sup>6</sup> or -N(R<sup>5</sup>)C(O)R<sup>5</sup>.

84. (Currently Amended) The method of ~~any one of Claims 49-76~~  
Claim 49 wherein the compound of formula (I) is a compound of formula (I) wherein at least one R<sup>1</sup> is heterocyclyl or heterocyclylalkyl.

85. (Currently Amended) The method of ~~any one of Claims 49-84~~  
Claim 49 wherein the compound of formula (I) is a compound of formula (I) wherein at least one R<sup>2</sup> is hydrogen, alkyl, alkenyl, cycloalkyl, cycloalkylalkyl, or cycloalkylalkenyl.

86. (Currently Amended) The method of ~~any one of Claims 49-84~~  
Claim 49 wherein the compound of formula (I) is a compound of formula (I) wherein at least one R<sup>2</sup> is aryl, aralkyl, or aralkenyl.

87. (Currently Amended) The method of ~~any one of Claims 49-84~~  
Claim 49 wherein the compound of formula (I) is a compound of formula (I) wherein at least one R<sup>2</sup> is halo, haloalkyl, or haloalkenyl.

88. (Currently Amended) The method of ~~any one of Claims 49-84~~  
Claim 49 wherein the compound of formula (I) is a compound of formula (I) wherein at least one R<sup>2</sup> is nitro, cyano, -R<sup>7</sup>-N=N-O-R<sup>6</sup> or -N(R<sup>5</sup>)<sub>2</sub>.

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89. (Currently Amended) The method of ~~any one of Claims 49-84~~  
Claim 49 wherein the compound of formula (I) is a compound of formula (I) wherein at least one R<sup>2</sup> is -OR<sup>5</sup>, -S(O)<sub>p</sub>R<sup>5</sup> (where p is 0 to 2), or -S(O)<sub>p</sub>N(R<sup>5</sup>)<sub>2</sub> (where p is 0 to 2).

90. (Currently Amended) The method of ~~any one of Claims 49-84~~  
Claim 49 wherein the compound of formula (I) is a compound of formula (I) wherein at least one R<sup>2</sup> is -C(O)OR<sup>5</sup> or -C(O)N(R<sup>5</sup>)<sub>2</sub>.

91. (Currently Amended) The method of ~~any one of Claims 49-84~~  
Claim 49 wherein the compound of formula (I) is a compound of formula (I) wherein at least one R<sup>2</sup> is -N(R<sup>5</sup>)C(O)OR<sup>6</sup> or -N(R<sup>5</sup>)C(O)R<sup>5</sup>.

92. (Currently Amended) The method of ~~any one of Claims 49-84~~  
Claim 49 wherein the compound of formula (I) is a compound of formula (I) wherein at least one R<sup>2</sup> is heterocyclyl or heterocyclylalkyl.

93. (Currently Amended) The method of ~~any one of Claims 49-92~~  
Claim 49 wherein each t is 0.

94. (Currently Amended) The method of ~~any one of Claims 49-92~~  
Claim 49 wherein each t is 1.

95. (Currently Amended) The method of ~~any one of Claims 49-92~~  
Claim 49 wherein each t is 2.